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**AGENDA**

**OU 7 IM/IRA/EA DD Project Team**

Wednesday, April 12, 1995

Interlocken, Small West Conference Room

10:00 AM



000063394

**1. PAM Modification Strategy (Roundtable)**

- Pros and cons of fixing the non-failing south wall

**2. Update on Closure Strategies (Stoller)**

**3. Review of Action Items**

**Next Meetings:**

April 19, 1995 - Interlocken, Small West Conference Room

Topics: PAM modification, Agency meeting

**ADMIN RECCRD**

BZ-A-000412

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April 18, 1995  
2510-95/44

Ms. Laurie Peterson-Wright  
EG&G Rocky Flats, Inc.  
P.O. Box 464, Bldg. 080  
Golden, Colorado 80402-0464

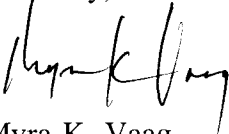
Subject: Submittal of April 12, 1995 Meeting Minutes  
Technical Working Group Meeting for Operable Unit No. 7  
(MTS Contract 353017TB3)

Dear Laurie:

Enclosed are meeting minutes to document the April 12, 1995, technical working group meeting for the OU 7 landfill closure interim measure/interim remedial action and environmental assessment.

If you have any questions, please contact me at your convenience.

Sincerely,



Myra K. Vaag  
Project Manager

Enclosure

cc:	W. Bartholomew w/o	EG&G	B. Caruso	Stoller
	T. Lindsay	EG&G	A. Crockett	Stoller
	P. Martin	EG&G	M. Eisenbeis	Stoller
	P. Corser	TerraMatrix	K. Fiebig	Stoller
			S. Franklin	Stoller
			C. Gee	Stoller
			J. Jankousky	Stoller
			D. Palmer	Stoller
			L. Ross w/o	Stoller
			B. Stephanus w/o	Stoller
			OU7 Project File	
			MKV Chron	

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Minutes for the OU 7 Landfill Closure IM/IRA/EA DD  
Technical Working Group Meeting  
April 12, 1995

The following topics were discussed:

**PAM Modification Strategy**

Based on the modeling results, approximately 60 percent of the water in the landfill is from groundwater inflow and 40 percent is from infiltration of precipitation. Of the groundwater inflow, approximately 87 percent is coming in on the north side, 6 percent on the west side, none on the south side of the landfill in the vicinity of the groundwater intercept system, and 7 percent on the south side in the vicinity of the slurry wall.

Possible reasons for failure of the existing groundwater intercept system were discussed. The tie-in from the existing north slurry wall to the groundwater intercept system may have clogged the pipe, causing head buildup north of the intercept system and forcing groundwater underneath the intercept system where it is not keyed into bedrock. The low slopes within the leachate collection trench may also contribute to failure of the system resulting from sedimentation.

Stoller proposed that a longer slurry wall, extending from the west end of the landfill east past the existing north slurry wall (approximately 2,000 feet), would be the best option for the PAM because it would not require a tie-in to the existing groundwater intercept system. Excavating and repairing or replacing the tie ins and valves was considered but would have low implementability and would probably not be cost effective because of the health and safety issues. Stoller also proposed leaving four groundwater-monitoring wells in place to monitor water levels across the new slurry wall on the north side and across the existing groundwater intercept system on the south side of the landfill. Estimated cost for the proposed slurry wall is approximately \$1 million.

Pros and cons of replacing the south groundwater intercept system and slurry wall, which have not failed, were also discussed. The groundwater modeling shows that little groundwater inflow ( $14 \text{ ft}^3/\text{day}$ ) occurs on the south side of the landfill. Portions of the south intercept system are not keyed into bedrock; however, there isn't as much groundwater on the south side of the landfill, and there is no significant head buildup to date. The groundwater intercept system has not failed, most likely because of the lower heads. It is expected that heads will remain the same after landfill closure as long as the groundwater intercept system is effective.

However, there is potential for failure similar to that on the north side of the landfill. Extending the slurry wall around the south side of the landfill would be the most conservative design; however, it appears that the existing system is effective and a new slurry wall is not needed on the south side.

There is potential that if the East Landfill Pond is designated as waters of the United States, then the groundwater intercept system discharge points (into the pond) would require NPDES permit(s). This would likely require monitoring which may in the long term result in treatment requirements because groundwater upgradient of the landfill contains elevated concentrations of chlorinated hydrocarbons. The full U-shaped slurry wall would cut off flow to the groundwater intercept pipe so that no discharge would occur and NPDES permit(s) would not be required.

Alternative technologies to control groundwater, such as the grout curtains/sheet pilings currently used at Hanford, were discussed as a potential backup plan in case the agencies do not approve the proposed slurry wall. Working group members felt that these alternatives would be effective, but the costs would be higher. Implementability might be a problem in the sandy, clayey gravels of the Rocky Flats Alluvium. EG&G will

contact the engineers at Hanford for more information. Stoller will try to obtain a video explaining construction techniques and success rates of conventional slurry walls from a subcontractor.

Working group members agreed that the document should be titled "Seep/Groundwater Control PAM," implying that the action will control groundwater inflow to the landfill and reduce outflow at the seep.

### **Update on Landfill Closure Strategy**

The Proposed Landfill Closure Strategy draft report will be completed and submitted to EG&G and DOE on April 13. Results of the water balance, background comparisons, potential chemical-specific ARARs for OU7, ARARs comparisons, PRG comparisons, and focused risk assessments for environmental media will be included as appendices to the report.

A slurry wall is proposed for seep/groundwater control on the north side of the landfill. This proposal will be presented in the Proposed Closure Strategy for OU 7 draft document as the final action; a slurry wall will not be proposed for the south side. Reasons for not building a slurry wall on the south side of the landfill (no head buildup therefore intercept system has not failed) and not reinforcing the slurry wall across the fault (because modeling suggests that the fault is not a source of groundwater inflow to the landfill) will be presented.

The results of the focused risk assessment for groundwater downgradient of the landfill indicate that groundwater in the vicinity of the East Landfill Pond exceeds the hazard index of 1 for noncarcinogenic risk ( $HI = 2$ ). Selenium drives the risk to human health from groundwater ingestion. Selenium concentrations are consistently elevated in groundwater in wells downgradient of IHSS 166.1 (trench used to dispose sewage sludge). Containing the source (IHSS 166.1) under the landfill cap will be presented as the most cost-effective solution, rather than collecting and treating groundwater for selenium.

Several other proposed issues were discussed as follows:

- The purpose of delisting the seep water and pond water is to eliminate the F039 hazardous waste code so that a portion of the pond may be left in place and any discharge from the landfill to the pond (i.e., leachate) would not be illegal.
- Any mention of "leachate" will be changed to "F039 contained in groundwater."
- Even though the East Landfill Pond is a manmade structure built in a drainage that is considered waters of the United States, the pond is not considered waters of the United States because surface water has been diverted around the pond ever since it was built. As a result, an NPDES permit is not required for discharge from the pond to No Name Gulch.
- Monitoring seep water and pond water is proposed until closure.
- Monitoring groundwater downgradient of the landfill is proposed for 30 years.
- Wetlands mitigation will be addressed in general.

EG&G will follow wetlands issues. Wetlands mitigation may take place on a sitewide basis or on a project-by-project basis, depending on the project schedule. The ratio of new wetlands to damaged wetlands will be negotiated with the agencies and depends on the proximity of new wetlands to the site and the predominant vegetation type. OU 7 has 0.080 acres of palustrine emergent wetlands (around pond) and 2.26 acres of palustrine unconsolidated bed wetlands (in pond).

Stoller will continue to research delisting under CERCLA (VHS modeling, exposure scenario used, and location of hypothetical receptor well), permitting under the Safe Drinking Water Act (NPDES), permitting under RCRA corrective action, and applicability of treatment standards (LDRs). Concentrations of contaminants of concern in seep water will be compared to maximum allowable concentrations (MACs) in the delisting guidance and to LDRs.

#### Action Items

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| 01-205  | Completed.   |
| 206     | Conduct an ecological benchmark screen to determine the risks of exposure to surface water and sediment in the pond by aquatic and terrestrial wildlife (M. Vaag, Stoller). In progress.   |
| 207     | Completed.   |
| 208     | Assist EG&G in preparing the OU 7 closure strategy paper for the next agency meeting (M. Vaag, Stoller). The draft Proposed Closure Strategy for OU 7 was completed and submitted to EG&G and DOE on April 13. Completed.  |
| 209-210 | Completed.   |
| 211     | Research EPA guidance on applying for ARARs waivers (S. Franklin, Stoller). In progress.   |
| 212-215 | Completed.   |
| 216     | Obtain a copy of EPA's comments on the modeling for the OU 4 cap (P. Witherill, DOE). HAZWRAP comments and a Comment Responsiveness Summary for EPA/CDPHE comments on the OU 4 IM/IR/EA Decision Document were provided to Stoller on April 12. Completed.   |
| 217     | Research data usability for other OUs to see if OU 7, which used 1990 to 1995 data, is consistent (L. Peterson-Wright, EG&G).  |
| 218-219 | Completed.   |
| 220     | Determine status of the compatibility testing for the slurry wall (P. Corser, TerraMatrix). One well (70693) was selected for groundwater samples for the slurry wall mix testing; one sample will be collected, and two tests will be performed for repeatability of results. T. Lindsay of EG&G will arrange for the samples to be collected. Testing is in progress.  |
| 221     | How does the recent failure of the clay cap at the Martin Marietta plant in Jefferson County affect the OU 7 design (T. Lindsay, EG&G)? The cap on the holding ponds at the Martin Marietta plant is a standard multiple-layer RCRA cover (specified by CDPHE) with fill material covered by the following layers: a filter layer for gas, geotextile, 2 feet of clay, VLDP liner, geonet, geotextile, and a 3-foot vegetative layer. Localized settlement caused stress between the clay and the geosynthetic layer is believed to have resulted in cap failure. Completed. |

- 222 Completed.
- 223 Look at selenium data in downgradient groundwater because it drives the risk to human health from groundwater ingestion. Check with EG&G risk assessment staff to see if selenium concentrations are elevated in groundwater at other OUs (K. Crute and J. Jankousky, Stoller). Selenium concentrations are consistently elevated in groundwater in wells downgradient of IHSS 166.1 (trench used to dispose sewage sludge). Containing the source (IHSS 166.1) under the landfill cap would be the most cost-effective solution, rather than collecting and treating groundwater for selenium. Completed.
- 224 Perform a risk assessment on F039 contained in groundwater within the landfill using an office worker ingestion scenario (K. Crute, Stoller). In progress.
- 225 Check with Waste Operations personnel to determine if a test of the existing groundwater intercept system discharge points is possible. Locate the north slurry wall (T. Lindsay, EG&G). The north slurry wall is located between wells 6787 (or 00393) and 6887. The valves for the groundwater intercept system have not been used for at least five years. Procedural requirements for a test may be overwhelming. Completed.
- 226 Look at as-built diagrams and survey data to determine the location of the north slurry wall (M. Eisenbeis, Stoller). The north slurry wall is longer than depicted on figures in the Final OU 7 Work Plan Memorandum. Coordinates from as-built diagrams will be used to accurately plot the slurry wall on CAD drawings. Completed.
- 227 Compile backup information for the closure strategy document regarding single-barrier cover systems (M. Eisenbeis, Stoller). Backup information was not needed for the closure strategy document. Completed.
- 228 Find out what the residential/recreational user scenario for pond sediments consists of (M. Vaag, Stoller). The exposure scenario is for a resident that uses the pond on a recreational basis (10 days per month) and is more conservative than a recreational scenario but less conservative than a residential scenario (every day). Completed.
- 229 Completed.
- 230 Research effectiveness, implementability, and cost of alternative technologies for slurry walls, such as the grout curtains/sheet pilings used at Hanford (T. Lindsay, EG&G).
- 231 Obtain a video about slurry walls for the agency meeting on April 26 (M. Eisenbeis, Stoller).
- 232 Research RCRA regulations to determine if treatment for F039 listed waste is required under RCRA corrective action, and if so, do treatment standards have to be met (L. Peterson-Wright, EG&G, and M. Vaag, Stoller).
- 233 Compare concentrations of analytes in seep water to LDRs (J. Jankousky, Stoller).
- 234 Research VHS modeling, exposure scenario used, and location of hypothetical receptor well for delisting under CERCLA (J. Jankousky, Stoller).
- 235 Keep current on Pond Water IM/IRA issues (L. Peterson-Wright, EG&G).

- 236 Determine the status of sitewide wetlands issues. Provide Stoller with a copy of the potential wetlands impacts at Rocky Flats (P. Martin, EG&G). EG&G provided Stoller with a copy of the most recent potential wetlands impacts table. Completed.
- 237 Provide Stoller with a map showing the location of the construction water supply for the Seep/Groundwater Control PAM (T. Lindsay, EG&G).
- 238 Field check the proposed slurry wall for location of mixing stations and potential problems with the existing fence. Stake the proposed slurry wall and have it surveyed (T. Lindsay, EG&G, and P. Corser, TerraMatrix).

#### **Next Meeting**

The next meeting will be at 10:00 a.m. on April 19, 1995, in the small west conference room at EG&G. The topics of discussion include the slurry wall accelerated action, Seep/Groundwater Control PAM, and the agency meeting.

#### **List of Attendees**

<b>Name</b>	<b>Organization</b>	<b>Phone</b>
Mary Eisenbeis	Stoller	546-4474
Tom Lindsay	EG&G	966-6985
Peter Martin	EG&G	966-8695
Laurie Peterson-Wright	EG&G Project Manager	966-8553
Paul Pigeon	RTG/DOE Support	966-5611
Myra Vaag	Stoller Project Manager	546-4417
Peg Witherill	DOE Project Manager	966-6585